botanacor

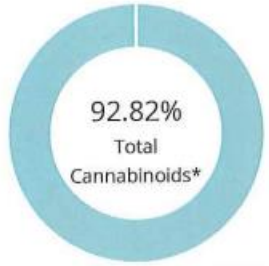
CERTIFICATE OF ANALYSIS

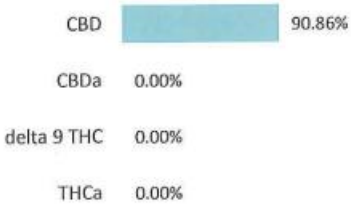
prepared for: [redacted]

8.02.10.22

Batch ID:		**Test ID:**	T000192317
Type:	Concentrate	**Submitted:**	02/14/2022 @ 08:55 AM
Test:	Potency	**Started:**	2/16/2022
Method:	TM14 (HPLC-DAD)	**Reported:**	2/17/2022

CANNABINOID PROFILE





Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.10	ND	ND
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.11	ND	ND
Cannabidiolic acid (CBDA)	0.11	ND	ND
Cannabidiol (CBD)	0.11	90.86	908.6
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.12	ND	ND
Cannabinolic Acid (CBNA)	0.07	ND	ND
Cannabinol (CBN)	0.03	0.10	1.0
Cannabigerolic acid (CBGA)	0.10	ND	ND
Cannabigerol (CBG)	0.02	1.42	14.2
Tetrahydrocannabivarinic Acid (THCVA)	0.09	ND	ND
Tetrahydrocannabivarin (THCV)	0.02	ND	ND
Cannabidivarinic Acid (CBDVA)	0.05	ND	ND
Cannabidivarin (CBDV)	0.03	0.32	3.2
Cannabichromenic Acid (CBCA)	0.04	ND	ND
Cannabichromene (CBC)	0.04	0.12	1.2
Total Cannabinoids		**92.82**	**928.2**
Total Potential THC**		ND	ND
Total Potential CBD**		90.86	908.6

NOTES:
N/A

% = % (w/w) = Percent (Weight of Analyte / Weight of Product)
* Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.
** Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step.
Total THC = THC + (THCa *(0.877)) and
Total CBD = CBD + (CBDa *(0.877))
ND = None Detected (Defined by Dynamic Range of the method)

FINAL APPROVAL

K Winternheimer — Karen Winternheime, 17-Feb-2022 1:16 PM — PREPARED BY / DATE

Rvan Weems, 17-Feb-2022 1:18 PM — APPROVED BY / DATE

Testing results are based solely upon the sample submitted to Botanacor Laboratories, LLC, in the condition it was received. Botanacor Laboratories, LLC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of Botanacor Laboratories, LLC. ISO/IEC 17025:2005 Accredited A2LA Certificate Number 4329.02

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Certificate #4329.02

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CERTIFICATE OF ANALYSIS

Prepared for:

[redacted]

8.02.10.22

Batch ID or Lot Number:	Test: **Pesticides**	Reported: **17Feb2022**	USDA License: NA
Matrix: Concentrate	Test ID: T000192319	Started: 16Feb2022	Sampler ID: NA
	Method(s): TM17 (LC-QQ LC MS/MS)	Received: 14Feb2022	Status: NA

Pesticides	Dynamic Range (ppb)	Result (ppb)
Abamectin	314 - 2696	ND
Acephate	43 - 2787	ND
Acetamiprid	40 - 2768	ND
Azoxystrobin	43 - 2742	ND
Bifenazate	43 - 2730	ND
Boscalid	38 - 2744	ND
Carbaryl	40 - 2740	ND
Carbofuran	42 - 2724	ND
Chlorantraniliprole	49 - 2714	ND
Chlorpyrifos	46 - 2760	ND
Clofentezine	285 - 2753	ND
Diazinon	290 - 2772	ND
Dichlorvos	281 - 2756	ND
Dimethoate	41 - 2744	ND
E-Fenpyroximate	288 - 2736	ND
Etofenprox	42 - 2753	ND
Etoxazole	295 - 2737	ND
Fenoxycarb	45 - 2756	ND
Fipronil	40 - 2762	ND
Flonicamid	44 - 2790	ND
Fludioxonil	314 - 2735	ND
Hexythiazox	44 - 2754	ND
Imazalil	267 - 2775	ND
Imidacloprid	42 - 2737	ND
Kresoxim-methyl	44 - 2759	ND

	Dynamic Range (ppb)	Result (ppb)
Malathion	292 - 2740	ND
Metalaxyl	43 - 2753	ND
Methiocarb	43 - 2731	ND
Methomyl	40 - 2785	ND
MGK 264 1	161 - 1620	ND
MGK 264 2	115 - 1133	ND
Myclobutanil	39 - 2742	ND
Naled	48 - 2760	ND
Oxamyl	42 - 2778	ND
Paclobutrazol	43 - 2734	ND
Permethrin	306 - 2744	ND
Phosmet	41 - 2744	ND
Prophos	298 - 2750	ND
Propoxur	42 - 2732	ND
Pyridaben	292 - 2774	ND
Spinosad A	31 - 2244	ND
Spinosad D	46 - 498	ND
Spiromesifen	276 - 2767	ND
Spirotetramat	291 - 2749	ND
Spiroxamine 1	17 - 1170	ND
Spiroxamine 2	23 - 1542	ND
Tebuconazole	285 - 2750	ND
Thiacloprid	42 - 2756	ND
Thiamethoxam	43 - 2801	ND
Trifloxystrobin	42 - 2753	ND

Final Approval

Samantha Smith
Sam Smith
17Feb2022
02:00:00 PM MST
PREPARED BY / DATE

Daniel Weidensaul
Daniel Weidensaul
17Feb2022
02:11:00 PM MST
APPROVED BY / DATE

[redacted]

https://results.botanacor.com/api/v1/coas/uuid/35253edd-2d87-4a23-bb09-06c2bc421e14

Definitions
ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range
ppb = Parts Per Billion

ilac-MRA A2LA ACCREDITED Certified Test Laboratory

Cert #4329.02
35253edd2d874a23bb0906c2bc421e14.1

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CERTIFICATE OF ANALYSIS

Prepared for:

[redacted]

8.02.10.22

Batch ID or Lot Number:	Test: **Residual Solvents**	Reported: **17Feb2022**	USDA License: N/A
Matrix: Concentrate	Test ID: T000192322	Started: 16Feb2022	Sampler ID: N/A
	Method(s): TM04 (GC-MS): Residual Solvents	Received: 14Feb2022	Status: N/A

Residual Solvents	**Dynamic Range** (ppm)	**Result** (ppm)	**Notes**
Propane	92 - 1838	ND	
Butanes (Isobutane, n-Butane)	187 - 3746	ND	
Methanol	64 - 1276	ND	
Pentane	98 - 1956	ND	
Ethanol	100 - 2007	ND	
Acetone	104 - 2082	ND	
Isopropyl Alcohol	109 - 2176	ND	
Hexane	6 - 128	ND	
Ethyl Acetate	108 - 2155	ND	
Benzene	0.2 - 4.4	ND	
Heptanes	102 - 2033	ND	
Toluene	19 - 374	ND	
Xylenes (m,p,o-Xylenes)	131 - 2624	ND	

Final Approval

Hannah Wright
17Feb2022
06:08:00 PM MST

PREPARED BY / DATE

Ryan Weems
17Feb2022
06:10:00 PM MST

APPROVED BY / DATE

[redacted]

https://results.botanacor.com/api/v1/coas/uuid/4fb060a2-fd07-4f57-91e8-5ab6329efb7f

Definitions
ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

ilac-MRA A2LA ACCREDITED ASTM Certified Test Laboratory

Cert #4329.02
4fb060a2fd074f5791e85ab6329efb7f.1

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CERTIFICATE OF ANALYSIS

Prepared for:

[redacted]

8.02.10.22

Batch ID or Lot Number:	Test: **Heavy Metals**	Reported: **15Feb2022**	USDA License: NA
Matrix: Concentrate	Test ID: T000192321	Started: 15Feb2022	Sampler ID: NA
	Method(s): TM19 (ICP-MS): Heavy Metals	Received: 14Feb2022	Status: NA

Heavy Metals	**Dynamic Range** (ppm)	**Result** (ppm)	**Notes**
Arsenic	0.04 - 4.47	ND	
Cadmium	0.04 - 4.29	ND	
Mercury	0.04 - 4.47	ND	
Lead	0.04 - 4.45	ND	

Final Approval

Daniel Weidensaul
16Feb2022
06:52:00 PM MST

PREPARED BY / DATE

Ryan Weems
16Feb2022
06:55:00 PM MST

APPROVED BY / DATE

[redacted]

https://results.botanacor.com/api/v1/coas/uuid/5208751c-c4e5-4167-b4e1-70bcf4fb3402

Definitions
ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

ilac-MRA A2LA ACCREDITED ASTM Certified Test Laboratory

Cert #4323.02
5208751cc4e54167b4e170bcf4fb3402.1

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CERTIFICATE OF ANALYSIS

Prepared for:

[redacted]

8.02.10.22

Batch ID or Lot Number:	Test: **Microbial Contaminants**	Reported: **17Feb2022**	USDA License: NA
Matrix: Concentrate	Test ID: T000192320	Started: 14Feb2022	Sampler ID: NA
	Method(s): TM25 (qPCR) TM24, TM26, TM27, TM28 (Culture Plating)	Received: 14Feb2022	Status: NA

Microbial Contaminants	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10^0 CFU/g	NA	Absent	Free from visual mold, mildew, and foreign matter
Salmonella	TM25: PCR	10^0 CFU/g	NA	Absent	None Detected
Total Yeast and Mold*	TM24: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	None Detected
Total Aerobic Count*	TM26: Culture Plating	10^2 CFU/g	$1.0x10^3$ - $1.5x10^5$	None Detected	
Total Coliforms*	TM27: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	

Final Approval

Brett Hudson
17Feb2022
12:27:00 PM MST

PREPARED BY / DATE

Sarah Henning
17Feb2022
01:15:00 PM MST

APPROVED BY / DATE

[redacted]

https://results.botanacor.com/api/v1/coas/uuid/d0ec6676-d9b7-422e-b12c-419ca69d8dac

Definitions
* Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form. Examples: 10^2 = 100 CFU, 10^3 = 1,000 CFU, 10^4 = 10,000 CFU, 10^5 = 100,000 CFU
CFU/g = Colony Forming Units per Gram, LOD = Limit of Detection
ULOQ = Upper Limit of Quantitation, LLOQ = Lower Limit of Quantitation
STEC = Shiga Toxin-Producing E. coli

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Cert #4329.02

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CERTIFICATE OF ANALYSIS

Prepared for:

[redacted]

11.02.10.22

Batch ID or Lot Number:	Test:	Reported:	USDA License:
	Potency	**17Feb2022**	N/A
Matrix:	Test ID:	Started:	Sampler ID:
Concentrate	T000192329	16Feb2022	N/A
	Method(s):	Received:	Status:
	TM14 (HPLC-DAD)	11Feb2022	N/A

Cannabinoids

	LOD (%)	LOQ (%)	Result (%)	Result (mg/g)	Notes
Cannabichromene (CBC)	0.043	0.149	ND	ND	
Cannabichromenic Acid (CBCA)	0.040	0.136	ND	ND	
Cannabidiol (CBD)	0.112	0.436	93.550	935.50	
Cannabidiolic Acid (CBDA)	0.115	0.447	ND	ND	
Cannabidivarin (CBDV)	0.026	0.103	0.230	2.30	
Cannabidivarinic Acid (CBDVA)	0.048	0.187	ND	ND	
Cannabigerol (CBG)	0.025	0.085	0.790	7.90	
Cannabigerolic Acid (CBGA)	0.103	0.354	ND	ND	
Cannabinol (CBN)	0.032	0.110	ND	ND	
Cannabinolic Acid (CBNA)	0.070	0.241	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.122	0.422	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.111	0.383	ND	ND	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.098	0.339	ND	ND	
Tetrahydrocannabivarin (THCV)	0.022	0.077	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.087	0.299	ND	ND	
Total Cannabinoids			**94.570**	**945.70**	
Total Potential THC**			ND	ND	
Total Potential CBD**			93.550	935.50	

Final Approval

K Winternheimer

Karen Winternheimer
17Feb2022
01:16:00 PM MST

PREPARED BY / DATE

Ryan Weems

Ryan Weems
17Feb2022
01:18:00 PM MST

APPROVED BY / DATE

[redacted]

https://results.botanacor.com/api/v1/coas/uuid/4ec6f7af-fce0-4723-bb4b-0d5f7b8365f2

Definitions
% = % (w/w) = Percent (weight of analyte / weight of product). ND = None Detected (defined by dynamic range of the method).
Total Potential Delta 9-THC or CBD is calculated to take into account the loss of a carboxyl group during decarboxylation step, using the following formulas: Total Potential Delta 9-THC = Delta 9-THC + (Delta 9-THCa *(0.877)) and Total CBD = CBD + (CBDa *(0.877)).

Cert #4329.02
4ec6f7affce04723bb4b0d5f7b8365f2.1

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CERTIFICATE OF ANALYSIS

Prepared for:

11.02.10.22

Batch ID or Lot Number:	Test:	Reported:	USDA License:
	Pesticides	**17Feb2022**	NA
Matrix:	Test ID:	Started:	Sampler ID:
Concentrate	T000192331	16Feb2022	NA
	Method(s):	Received:	Status:
	TM17 (LC-QQ LC MS/MS)	11Feb2022	NA

Pesticides	Dynamic Range (ppb)	Result (ppb)		Dynamic Range (ppb)	Result (ppb)
Abamectin	314 - 2696	ND	Malathion	292 - 2740	ND
Acephate	43 - 2787	ND	Metalaxyl	43 - 2753	ND
Acetamiprid	40 - 2768	ND	Methiocarb	43 - 2731	ND
Azoxystrobin	43 - 2742	ND	Methomyl	40 - 2785	ND
Bifenazate	43 - 2730	ND	MGK 264 1	161 - 1620	ND
Boscalid	38 - 2744	ND	MGK 264 2	115 - 1133	ND
Carbaryl	40 - 2740	ND	Myclobutanil	39 - 2742	ND
Carbofuran	42 - 2724	ND	Naled	48 - 2760	ND
Chlorantraniliprole	49 - 2714	ND	Oxamyl	42 - 2778	ND
Chlorpyrifos	46 - 2760	ND	Paclobutrazol	43 - 2734	ND
Clofentezine	285 - 2753	ND	Permethrin	306 - 2744	ND
Diazinon	290 - 2772	ND	Phosmet	41 - 2744	ND
Dichlorvos	281 - 2756	ND	Prophos	298 - 2750	ND
Dimethoate	41 - 2744	ND	Propoxur	42 - 2732	ND
E-Fenpyroximate	288 - 2736	ND	Pyridaben	292 - 2774	ND
Etofenprox	42 - 2753	ND	Spinosad A	31 - 2244	ND
Etoxazole	295 - 2737	ND	Spinosad D	46 - 498	ND
Fenoxycarb	45 - 2756	ND	Spiromesifen	276 - 2767	ND
Fipronil	40 - 2762	ND	Spirotetramat	291 - 2749	ND
Flonicamid	44 - 2790	ND	Spiroxamine 1	17 - 1170	ND
Fludioxonil	314 - 2735	ND	Spiroxamine 2	23 - 1542	ND
Hexythiazox	44 - 2754	ND	Tebuconazole	285 - 2750	ND
Imazalil	267 - 2775	ND	Thiacloprid	42 - 2756	ND
Imidacloprid	42 - 2737	ND	Thiamethoxam	43 - 2801	ND
Kresoxim-methyl	44 - 2759	ND	Trifloxystrobin	42 - 2753	ND

Final Approval

Sam Smith
17Feb2022
02:00:00 PM MST
PREPARED BY / DATE

Daniel Weidensaul
17Feb2022
02:11:00 PM MST
APPROVED BY / DATE

https://results.botanacor.com/api/v1/coas/uuid/a15defc4-c59b-4af2-8404-b91ddc05b97c

Definitions
ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range
ppb = Parts Per Billion

ACCREDITED

Cert #4329.02
a15defc4c59b4af28404b91ddc05b97c.1

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CERTIFICATE OF ANALYSIS

Prepared for:

[redacted]

11.02.10.22

Batch ID or Lot Number:	Test: **Heavy Metals**	Reported: **15Feb2022**	USDA License: NA
Matrix: Concentrate	Test ID: T000192333	Started: 15Feb2022	Sampler ID: NA
	Method(s): TM19 (ICP-MS): Heavy Metals	Received: 11Feb2022	Status: NA

Heavy Metals	**Dynamic Range** (ppm)	**Result** (ppm)	**Notes**
Arsenic	0.04 - 4.47	ND	
Cadmium	0.04 - 4.29	ND	
Mercury	0.04 - 4.47	ND	
Lead	0.04 - 4.45	ND	

Final Approval

Daniel Weidensaul
16Feb2022
06:52:00 PM MST
PREPARED BY / DATE

Ryan Weems
16Feb2022
06:55:00 PM MST
APPROVED BY / DATE

[redacted]

https://results.botanacor.com/api/v1/coas/uuid/704584d4-1387-4c94-8246-11e320a2fc96

Definitions
ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

Cert #4329.02
704584d413874c94824611e320a2fc96.1

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CERTIFICATE OF ANALYSIS

Prepared for:

[redacted]

11.02.10.22

Batch ID or Lot Number:	Test: **Residual Solvents**	Reported: **17Feb2022**	USDA License: N/A
Matrix: Concentrate	Test ID: T000192334	Started: 16Feb2022	Sampler ID: N/A
	Method(s): TM04 (GC-MS): Residual Solvents	Received: 11Feb2022	Status: N/A

Residual Solvents	**Dynamic Range** (ppm)	**Result** (ppm)	**Notes**
Propane	88 - 1752	ND	
Butanes (Isobutane, n-Butane)	179 - 3570	ND	
Methanol	61 - 1216	ND	
Pentane	93 - 1864	ND	
Ethanol	96 - 1913	ND	
Acetone	99 - 1984	ND	
Isopropyl Alcohol	104 - 2075	ND	
Hexane	6 - 122	ND	
Ethyl Acetate	103 - 2054	ND	
Benzene	0.2 - 4.2	ND	
Heptanes	97 - 1938	ND	
Toluene	18 - 357	ND	
Xylenes (m,p,o-Xylenes)	125 - 2501	ND	

Final Approval

Hannah Wright
17Feb2022
06:08:00 PM MST

PREPARED BY / DATE

Ryan Weems
17Feb2022
06:10:00 PM MST

APPROVED BY / DATE

[redacted]

https://results.botanacor.com/api/v1/coas/uuid/f21c99bd-[redacted]7371

Definitions
ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

Cert #4329.02
f21c99bd235d47e18bb1505d5ceb7371.1

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CERTIFICATE OF ANALYSIS

Prepared for:

[redacted]

11.02.10.22

Batch ID or Lot Number:	Test: **Microbial Contaminants**	Reported: **17Feb2022**	USDA License: NA
Matrix: Concentrate	Test ID: T000192332	Started: 14Feb2022	Sampler ID: NA
	Method(s): TM25 (qPCR) TM24, TM26, TM27, TM28 (Culture Plating)	Received: 11Feb2022	Status: NA

Microbial Contaminants

	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10^0 CFU/g	NA	Absent	Free from visual mold, mildew, and foreign matter
Salmonella	TM25: PCR	10^0 CFU/g	NA	Absent	None Detected
Total Yeast and Mold*	TM24: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	None Detected
Total Aerobic Count*	TM26: Culture Plating	10^2 CFU/g	$1.0x10^3$ - $1.5x10^5$	None Detected	
Total Coliforms*	TM27: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	

Final Approval

Brett Hudson
17Feb2022
12:27:00 PM MST

PREPARED BY / DATE

Sarah Henning
17Feb2022
01:15:00 PM MST

APPROVED BY / DATE

[redacted]

https://results.botanacor.com/api/v1/coas/uuid/c66868[redacted]28b

Definitions
* Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form. Examples: 10^2 = 100 CFU, 10^3 = 1,000 CFU, 10^4 = 10,000 CFU, 10^5 = 100,000 CFU
CFU/g = Colony Forming Units per Gram, LOD = Limit of Detection
ULOQ = Upper Limit of Quantitation, LLOQ = Lower Limit of Quantitation
STEC = Shiga Toxin-Producing E. coli

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Cert #4328.02
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